**Unit Plan**

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| **Unit Author** |
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| **Unit Overview** |
| **Unit Title:**  *Using the Scientific Method* |
| **Unit Summary:**  ***Day 1:*** *An in-depth discussion about the scientific method.*  ***Day 2-3:*** *Students will be divided into teams.  Each team will be given a lab guide. The team will complete the experiment.  Teams will use what they learned about scientific method to identify the scientific method processes within the experiments.  Students will also identify the independent and dependent variables.*  ***Day 4-5:*** *Teams will then create one of the following: glogster, newsletter, or xtranormal movie.  The projects will summarize the team’s experiment, highlight the scientific method and identify the various components. Each project will be shown to the class.* |
| **Subject Area**:  *Life Science* |
| **Grade Level:**  *7th grade* |
| **Approximate Time Needed:**  *(5) Five 50-minute classes* |
| **Unit Foundation** |
| **Targeted Content Standards and Benchmarks:**  5. Identify independent variables, dependent variables, and variables that should be  controlled in designing an experiment (SI-M-A2)  8. Use consistency and precision in data collection, analysis, and reporting (SI-M-A3)  27. Recognize that science uses processes that involve a logical and empirical, but  flexible, approach to problem solving (SI-M-B1) |
| **Student Objectives/Learning Outcomes:**  Students will use the scientific method during a scientific investigation.  Students will accurately collect, analyze and report data discovered in a scientific investigation.  Students will identify independent and dependent variables within the scientific experiment. |
| **Curriculum-Framing Questions**  ●     **Essential Questions:**               Do you know any goo investigators?  ●     **Unit Questions:**  Why is the scientific method used?  Why do conclusions differ from scientist to scientist?  ●     **Content Questions** What is the first step in conducting a scientific investigation?  What common mistakes are made during a scientific investigation?  What is the difference between an independent and dependent variable? |
| **Assessment Plan** |
| **Assessment Timeline**     |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Before project work begins** |  | **Students work on Projects and complete tasks** |  | **After Project work is completed** |  | | *Discussion*    *Questions*  *Rubric for unit* |  | *Lab Reports*    *Checklists*    *Teacher Observations*    *Peer Evaluations* |  | *Final Product*    *Graded Rubric*    *Presentation* | *Final Peer Evaluation* | |  |  |  |  |  |  | |
| **Assessment Summary:**   |  |  |  | | --- | --- | --- | |  | **Process and Purpose of Assessment** | **Phase of Unit** | | Rubric | Students will receive rubrics for all portions that will be completed | Before  During  After | | Graphic  Organizer | Charts/Tables to document experimental data  Lab Reports | Before  During  After | | Checklist | For experiment & project  To ensure that all assessments are complete | Before  During  After | | Peer Feedback | Each team will present their project & class will give feedback for each project | Before  During  After | |
| **Unit Details** |
| **Prerequisite Skills:**  *Students must be able to work collaboratively in groups; follow a lab guide; have the ability to write a Lab report; objectively evaluate peers; have the ability to journal; follow a rubric/checklist* |
| **Instructional Procedures:**  *A clear picture of the instructional cycle- a description of the scope and sequence of student activities and an explanation for how students are involved in planning their own learning.* |
| Accommodations for Differentiated Instruction |
| **Special Needs Students:**  *Teacher will provide necessary modifications as described in each student’s IEP.  Please see copy of modifications in the front of lesson plan binder.* |
| **Nonnative Speakers:**  *Describe language support, such as English Language Learner (ELL) instruction and tutoring from more able bilingual students or community volunteers. Describe adaptive materials, such as support from specialists. List specific resources you will use. Also describe modifications in how students express their learning, such as first language rather than English or an oral interview instead of a written test.* |
| **Gifted/Talented Students:**  *Describe the various ways students may explore curriculum content, including independent study, and various options through which students can demonstrate or exhibit what they have learned, such as more challenging tasks, extensions that require in-depth coverage, extended investigation in related topics of the learners choice, and open-ended tasks or projects. List specific resources you will use.* |
| **Materials and Resources Required for the Unit** |
| **Technology Hardware** (*Place an x next to all equipment needed)*     |  |  |  | | --- | --- | --- | | \_\_Camera  \_\_Computer(s)  X\_Digital Camera  \_\_DVD Player  \_\_Internet Connection | \_\_Laser Disk  \_\_Printer  X\_Projection System  \_\_Scanner \_\_Television | \_\_VCR  X  Video Camera  \_\_Video Conferencing     Equipment  \_\_Other | |
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| **Technology Software:** *(Place an x next to all software needed)*     |  |  |  | | --- | --- | --- | | \_\_Database Spreadsheet  \_\_Desktop Publishing  \_\_E-mail Software  \_\_Encyclopedia on CD-Rom | \_\_Image Processing  \_\_Internet Web Browser  \_\_Multimedia | \_\_Web page Development  \_\_ Word Processing  X\_Other | |
| **Printed Materials:**  *Textbooks,  lab guides, looseleaf/lab report sheet* |
| **Supplies:**  *Digital camera, flip camera, lab supplies, computer, projector* |
| **Internet Resources:**  *portaportal* |
| **Other Resources**:  *Experiments* |